Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

1. (original) A touch sensor, comprising:

a substrate having a resistive touch region with first and second oppositely disposed edges and third and fourth oppositely disposed edges;

a plurality of conductive polymer switches arranged in first, second, third, and fourth switch arrays extending along the respective first, second, third, and fourth touch region edges;

a first electrically conductive path coupled to the first and third switch arrays; and

a second electrically conductive path coupled to the second and fourth switch arrays;

wherein the first and second switch arrays close and the third and fourth switch arrays open when the first path is energized and the second path is grounded, and the first and second switch arrays open and the third and fourth switch arrays close when the first path is grounded and the second path is energized.

2. (original) The touch sensor of claim 1, wherein each of the switches has two layers of electrically conductive polymer.

3. (original) The touch sensor of claim 2, wherein one of the electrically conductive polymer layers is a p-type semiconductor layer and the other of the electrically conductive polymer layers is an n-type semiconductor polymer layer.

4. (original) The touch sensor of claim 3, wherein the p-type conductive polymer layer is composed of doped polythiophene, poly (3,4-ethylenedioxythiophene)-poly(4-styrenesulfonate).

5. (original) The touch sensor of claim 4, wherein the n-type semiconductor layer is composed of doped poly(2-methoxy, 5-(2'-ethyl-hexyloxy)-1, 4-phenylene vinylene).

6. (original) The touch sensor of claim 1, wherein at least portions of the first and second paths comprise electrically conductive traces that extend along the respective edges of the resistive touch region.

7. (currently amended) The touch sensor of claim 1, wherein the resistive touch region comprises a resistive layer, and the touch sensor further comprises ~~comprising~~ a coversheet disposed over the resistive touch region.

8. (original) The touch sensor of claim 1, wherein the resistive touch region comprises a resistive layer and a dielectric layer disposed over the resistive layer.

9. (original) A touch display, comprising:

a display device; and

the touch sensor of claim 1, wherein the touch sensor forms a front surface of the display device, and wherein the substrate is transparent.

10. (original) A touch sensor system, comprising:

the touch sensor of claim 1; and

control electronics coupled to the first and second paths alternately placing the touch sensor in a first state by energizing the first path and grounding the second path, and in a second state by grounding the first path and energizing the second path, wherein the control electronics receives touch information from the touch sensor and determines the location of a touch on the touch sensor based on the touch information.

11. (currently amended) A touch sensor, comprising:

a substrate having a resistive touch region;

a plurality of conductive polymer devices arranged in a linear array extending along an edge of the resistive touch region, each of the devices having first and second terminals and being configured to allow electrical current conduction from the first terminal to the second terminal when in a first state, and prevent electrical current conduction from the second terminal to the first terminal when in a second state; and

an electrically conductive path coupled to one of the first and second terminals of the device array, wherein the other of the first and second terminals of the device array is ~~are~~ electrically coupled to the resistive touch region.

12. (original) The touch sensor of claim 11,

comprising first and second electrically conductive paths;

wherein the resistive touch region has first and second oppositely disposed edges and third and fourth oppositely disposed edges;

wherein the plurality of devices are arranged in first, second, third, and fourth arrays extending along the respective first, second, third, and fourth touch region edges; and

wherein the first and second terminals of the first device array are respectively electrically coupled to the first path and the resistive touch region, the first and second terminals of the second device array are respectively electrically coupled to the resistive touch region and the second path, the first and second terminals of the third device array are respectively electrically coupled to the resistive touch region and the first path, and the first and second terminals of the fourth device array are respectively electrically coupled to the second path and the resistive touch region.

13. (original) The touch sensor of claim 11, wherein each of the devices has only the first and second terminals.

14. (currently amended) The touch sensor of claim 11, wherein the each of the devices comprises a third terminal for alternately placing the respective device in an on state and an off state, the touch sensor further comprising another electrically conductive path coupled to the third terminals of the device array.

15. (original) The touch sensor of claim 11, wherein each of the devices has two layers of electrically conductive polymer.

16. (original) The touch sensor of claim 15, wherein one of the electrically conductive polymer layers is a p-type semiconductor layer and the other of the electrically conductive polymer layers is an n-type semiconductor polymer layer.

17. (original) The touch sensor of claim 16, wherein the p-type conductive polymer layer is composed of doped polythiophene, poly (3,4-ethylenedioxythiophene)-poly(4-styrenesulfonate).

18. (original) The touch sensor of claim 17, wherein the n-type semiconductor layer is composed of doped poly(2-methoxy, 5-(2'-ethyl-hexyloxy)-1, 4-phenylene vinylene).

19. (original) The touch sensor of claim 11, wherein at least a portion of the path comprises an electrically conductive trace extending along the edge of the resistive touch region.

20. (currently amended) The touch sensor of claim 11, wherein the resistive touch region comprises a resistive layer, and the touch sensor further comprises ~~comprising~~ a coversheet disposed over the resistive touch region.

21. (original) The touch sensor of claim 11, wherein the resistive touch region comprises a resistive layer and a dielectric layer disposed over the resistive layer.

22. (original) A touch display, comprising:

a display device; and

the touch sensor of claim 11, wherein the touch sensor forms a front surface of the display device, and wherein the substrate is transparent.

23. (original) A touch sensor system, comprising:

the touch sensor of claim 11, and

control electronics coupled to the first and second paths alternately placing the touch sensor in a first state by energizing the first path and grounding the second path, and in a second state by grounding the first path and energizing the second path, wherein the control electronics receives touch information from the touch sensor and determines the location of a touch on the touch sensor based on the touch information.

24. (withdrawn) A method of manufacturing a touch sensor, comprising:

providing a substrate having a resistive touch region;

forming a first metal layer along an edge of the resistive touch region;

forming a first electrically conductive polymer layer over the first electrically conductive metal;

forming a second metal layer over the first electrically conductive polymer layer, wherein one of the first and second metal layers is formed as spaced apart elements in electrical contact with the resistive touch region.

25. (withdrawn) The method of claim 24, further comprising forming a second electrically conductive polymer layer between the first electrically conductive polymer layer and the second metal layer.

26. (withdrawn) The method of claim 24, wherein one of the first and second electrically conductive polymer layers is composed of an n-type semiconductor material, and the other of the

first and second electrically conductive polymer layers is composed of a p-type semiconductor material.

27. (withdrawn) The method of claim 24, further comprising forming an insulative material between the first metal and the resistive touch region, wherein the second metal is an electrical contact with the resistive touch region.

28. (withdrawn) The method of claim 24, wherein the first metal is in electrical contact with the resistive touch region.

29. (withdrawn) The method of claim 24, further comprising securing an electrically conductive lead to the other of the first and second metal layers.

30. (withdrawn) The method of claim 24, wherein the resistive touch region comprises a resistive layer, and the spaced apart elements are directly coupled to the resistive layer.

31. (withdrawn) The method of claim 24, wherein the resistive touch region comprises a resistive layer and a capacitive layer, and the spaced apart elements are directly coupled to the capacitive layer.